

Notice of Allowability

Application No.

09/540,163

Applicant(s)

MORALES, CARLOS H.

Examiner

Ellen C. Tran

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 23 January 2006.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Art Unit: 2134

Examiner's Amendment
and Reasons for Allowance

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- 69
1. In response to amendment filed on 23 January 2006. *Please enter entire claim set.*
 2. An examiner's amendment to the record is attached. The attached amendment adds details to the claims. In the claims "enhanced level testing for" was added to the preamble of the independent and dependent claims enhanced level testing is explained on page 2, of the applicant's specification. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance: Claims 1-24 are allowed, in view of amendment to claims as well as arguments beginning on page 13, "Wang discloses sending the address of disks to a RAID controller and vice versa. RAID parameters are sent to the disks and then discs supply characterization information back to the RAID controller (col. 9 line 5-11) ... Applicant's claimed invention passes a key data pattern from an initiator to the echo buffer of a target and the initiator reads the key data pattern from the echo buffer of the target".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Gilbert Barron Jr.
GILBERTO BARRON JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

2/16/06

LISTING OF CLAIMS

The listing of claims provided below replaces all prior versions and lists of claims in the application.

1. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment, a first initiator implementing the method, comprising:

generating a key data pattern including a key header and a pattern, the key header including data identifying the first initiator;

writing the key data pattern to an echo buffer of a target;

reading the key data pattern from the echo buffer of the target; and

examining the key header read from the echo buffer to ascertain a level of communication integrity of a physical connection with the target, the examining determining a throughput capability of the physical connection, the examining includes determining whether the key data pattern read from the echo buffer includes a byte miscompare.

2. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 1, wherein generating the key header includes:

generating a byte 0;

generating a byte 1;

generating a byte 2; and

generating a byte 3.

3. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 2, wherein the byte 0 is an ID byte, the byte 1 is a host ID, the byte 2 is a logical negation of the host ID, and byte 3 is a logical negation of the ID byte.

4. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 3, wherein the ID byte is a manufacturer signature ID, and the host ID is an initiator ID.

5. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 1, wherein examining the key header includes one of:

determining whether the echo buffer returns an error indication;

determining whether data of the key header has been changed; or

determining whether the data in the key header specifically indicates a collision with data from another initiator using a same key header system.

6. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 5, wherein the determining of whether data of the key header has been changed occurs when the multiple initiators are heterogeneous.

7. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 5, wherein the determining of whether the data in the key header specifically indicates the collision occurs when the multiple initiators are homogeneous.

8. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 5, wherein when it is determined that the error indication is returned from the echo buffer, the first initiator being configured to rewrite the key data pattern to the echo buffer, the rewriting being performed for a set number of times before an adjustment is made to the level of communication integrity of the physical connection with the target.

9. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 6, wherein when it is determined that the data of the key header has been changed, the first initiator being configured to rewrite the key data pattern to the echo buffer, the rewriting being performed for a set number

of times before an adjustment is made to the level of communication integrity of the physical connection with the target.

10. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 7, wherein when it is determined that the data in the key header specifically indicates the collision with data from another initiator using the same key header system, the first initiator being configured to rewrite the key data pattern to the echo buffer, the rewriting being performed for a set number of times before an adjustment is made to the level of communication integrity of the physical connection with the target.

11. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 7, wherein the collision occurs when a byte 0 matches a specific manufacturer ID, a byte 1 does not match the first initiator's ID, a byte 2 is a logical negation of byte 1, and a byte 3 is a logical negation of byte 0.

12. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 6, wherein when it is determined that data of the key header has been changed, it is assumed that a collision occurred.

13. (Currently Amended): A method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 1, wherein writing the key data pattern includes:

sending linked commands to the echo buffer to prevent the echo buffer from receiving data from another initiator, the linked commands being configured to link write and read commands and to disable a SCSI disconnection.

14. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment that includes at least a first initiator and a second initiator in communication with a target device, the method comprising:

generating a key data pattern, the key header including data identifying the first initiator;
sending a write echo buffer (WEB) command to write the key data pattern to an echo buffer of the target;

sending a read echo buffer (REB) command to the echo buffer, the REB command being configured to request a transmission of the key data pattern from the echo buffer to the first initiator; and

examining the key data pattern received from the echo buffer to ascertain a level of communication integrity of a physical connection between the first initiator and the target device, the examining determining a throughput capability of the physical connection, the examining includes determining whether the key data pattern received from the echo buffer includes a byte miscompare.

15. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 14, wherein before the key data pattern is generated, the method includes:

sending an asynchronous inquiry to the target device, the asynchronous inquiry being configured to request a transmission of a valid data pattern from the target device and receiving the valid data pattern from the target device in response to the asynchronous inquiry; and

sending a synchronous inquiry to the target device, the synchronous inquiry being configured to request a faster transmission of another valid data pattern in order to negotiate an optimal throughput speed with the target device and receiving the another valid data pattern from the target device in response to the synchronous inquiry.

16. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 15, wherein after the sending of the synchronous inquiry, the method includes:

sending a read echo buffer description (REBD) command to the echo buffer of the target, the REBD command being configured to request information regarding a size of the echo buffer and whether the echo buffer supports collision detection.

17. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 14, further comprising:

detecting a data collision during the examining of the key data pattern received from the echo buffer; and

if a collision is detected, the method includes,

re-sending a WEB command with the key data pattern to the echo buffer, the re-sending being performed for a set number of times before an adjustment is made to the level of communication integrity of the physical connection between the first initiator and the target.

18. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 14, wherein generating the key header includes:

generating a byte 0;
generating a byte 1;
generating a byte 2;
generating a byte 3; and
generating a pattern.

19. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim

18, wherein the byte 0 is an ID byte, the byte 1 is a host ID, the byte 2 is a logical negation of the host ID, and byte 3 is a logical negation of the ID byte.

20. (Currently Amended): A computer implemented method for enhanced level testing for verifying bus performance in a multiple initiator environment as recited in claim 19, wherein the ID byte is a manufacturer signature ID, and the host ID is an initiator ID.

21. (Currently Amended): A computer readable media having program instructions for enhanced level testing for verifying bus performance in a multiple initiator environment that includes at least a first initiator and a second initiator in communication with a target device, the computer readable media comprising:

program instructions for generating a key data pattern;

program instructions for sending a write echo buffer (WEB) command to write the key data pattern to an echo buffer of the target;

program instructions for sending a read echo buffer (REB) command to the echo buffer, the REB command being configured to request a transmission of the key data pattern from the echo buffer to the first initiator; and

program instructions for examining the key data pattern received from the echo buffer to ascertain a level of communication integrity of a physical connection between the first initiator and the target device, the program instructions for examining includes program instructions for

determining whether the key data pattern received from the echo buffer includes a byte miscompare.

22. (original): A computer readable media as recited in claim 21, further comprising:

program instructions for detecting a data collision during the examining of the key data pattern received from the echo buffer; and

if a collision is detected, the method includes,

program instructions for re-sending a WEB command with the key data pattern to the echo buffer, the re-sending being performed for a set number of times before an adjustment is made to the level of communication integrity of the physical connection between the first initiator and the target.

23. (original): A computer readable media as recited in claim 21, wherein program instructions for generating the key header includes:

program instructions for generating a byte 0;

program instructions for generating a byte 1;

program instructions for generating a byte 2;

program instructions for generating a byte 3; and

program instructions for generating a pattern.

24. (original): A computer readable media as recited in claim 23, wherein the byte 0 is an ID byte, the byte 1 is a host ID, the byte 2 is a logical negation of the host ID, and byte 3 is a logical negation of the ID byte.